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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/506,671

04/07/2005

Kazuhiko Sugiyama

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23850 7590 04/17/2008  
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EXAMINER

KEE, FANNIE C

ART UNIT

PAPER NUMBER

3679

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/506,671	<b>Applicant(s)</b> SUGIYAMA ET AL.	
	<b>Examiner</b> Fannie Kee	<b>Art Unit</b> 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6 and 8-13 is/are allowed.
- 6) ☒ Claim(s) 1-3, 14, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 16 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. Upon further review and consideration, claim 14 has been withdrawn by Examiner as allowable subject matter.
2. Claims 4-6 remain allowable.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, that each of the joint members is provided in an abutting end face thereof with an annular recessed portion for forming a portion for accommodating the gasket therein when the joint members are butted against each other, the gasket being in intimate contact with an inner surface of the recessed portion of the first joint member approximately over the entire area thereof when the pipe joint is properly tightened up, a surface portion of the gasket exposed from the same recessed portion being then in intimate contact with an inner surface of the recessed portion of the second joint member approximately over the entire area thereof, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion thereof being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the recessed portion thereof approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion thereof

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being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the recessed portion thereof approximately over the entire surface areas thereof must be shown or the features canceled from claim 3. No new matter should be entered.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 14, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hideo et al Japanese Patent No. 06-241362 in view of Boitnott et al U.S. Patent No. 2,726,104.

With regard to claim 1, and as seen in Figure 5, Hideo et al disclose a pipe joint comprising

a first (1) and a second (1) tubular joint member,  
a synthetic resin gasket (8) interposed between abutting portions of the joint members  
and screw means (5, 6) for joining the joint members,

the pipe joint being characterized in that the first joint member is provided in an abutting end face thereof with an annular recessed portion having an opening remaining therein with the gasket entirely fitted therein,

wherein when the pipe joint is manually tightened up, a first gap is present between the portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion and the portion of the abutting end face of the second joint member positioned radially inwardly of the ridge, and a second gap greater than the first gap is present between the portion of the abutting end face of the first joint member positioned radially outwardly of the

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recessed portion and the portion of the abutting end face of the second joint member positioned radially outwardly of the ridge (*Note: the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation is given little patentable weight.*),

wherein each of the joint members is provided at the abutting end face thereof with a flange portion, and the screw means comprises an annular male screw member (6) having a forward end face in bearing contact with the flange portion of one of the joint members, and a cap nut (5) fitted around the other joint member and having a top wall in bearing contact with the flange portion of said other joint member, the cap nut being screwed on the male screw member.

However, Hideo et al do not disclose that the first and second tubular members are formed of a synthetic resin or the second joint member being provided with an annular ridge on an abutting end face thereof, the ridge being fitted in the opening of the recessed portion with the gasket fitted in the recessed portion, an outer surface of the ridge of the second joint member being pressed against an inner surface of the recessed portion of the first joint member with the gasket interposed between the surfaces in intimate contact therewith approximately over the entire surface areas when the pipe joint is properly tightened up, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the ridge approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint

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member positioned radially outwardly of the ridge approximately over the entire surface areas thereof.

Boitnott et al teach that the second joint member (10) can be provided with an annular ridge (14) on an abutting end face thereof, the ridge being fitted in the opening of the recessed portion with the gasket fitted in the recessed portion, an outer surface of the ridge of the second joint member being pressed against an inner surface of the recessed portion of the first joint member with the gasket interposed between the surfaces in intimate contact therewith approximately over the entire surface areas when the pipe joint is properly tightened up, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the ridge approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the ridge approximately over the entire surface areas thereof such that efficient sealing can be effected (column 1, lines 42-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the second joint member with an annular ridge on an abutting end face, the ridge being fitted in the opening of the recessed portion with the gasket fitted in the recessed portion, an outer surface of the ridge of the second joint member being pressed against an inner surface of the recessed portion of the first joint member with the gasket interposed between the surfaces in intimate contact therewith approximately over the entire surface areas

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when the pipe joint is properly tightened up, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the ridge approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the ridge approximately over the entire surface areas thereof such that efficient sealing can be effected as taught by Boitnott et al.

It would also have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the first and second tubular members from a synthetic resin because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With regard to claim 14, and as seen in Figure 5, Hideo et al disclose a pipe joint comprising

a first (1) and a second (1) tubular joint member,  
a synthetic resin gasket (8) interposed between abutting portions of the joint members  
and screw means (5, 6) for joining the joint members,

the pipe joint being characterized in that the first joint member is provided in an abutting end face thereof with an annular recessed portion having an opening remaining therein with the gasket entirely fitted therein,



wherein each of the joint members is provided at the abutting end face thereof with a flange portion, and the screw means comprises an annular male screw member (6) having a forward end face in bearing contact with the flange portion of one of the joint members, and a cap nut (5) fitted around the other joint member and having a top wall in bearing contact with the flange portion of said other joint member, the cap nut being screwed on the male screw member.

However, Hideo et al do not disclose that the first and second tubular members are formed of a synthetic resin or the second joint member being provided with an annular ridge on an abutting end face thereof, the ridge being fitted in the opening of the recessed portion with the gasket fitted in the recessed portion, an outer surface of the ridge of the second joint member being pressed against an inner surface of the recessed portion of the first joint member with the gasket interposed between the surfaces in intimate contact therewith approximately over the entire surface areas when the pipe joint is properly tightened up, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the ridge approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the ridge approximately over the entire surface areas thereof.

Boitnott et al teach that the second joint member (10) can be provided with an annular ridge (14) on an abutting end face thereof, the ridge being fitted in the opening of the recessed portion with the gasket fitted in the recessed portion, an outer surface of the ridge of the second

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joint member being pressed against an inner surface of the recessed portion of the first joint member with the gasket interposed between the surfaces in intimate contact therewith approximately over the entire surface areas when the pipe joint is properly tightened up, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the ridge approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the ridge approximately over the entire surface areas thereof such that efficient sealing can be effected (column 1, lines 42-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the second joint member with an annular ridge on an abutting end face, the ridge being fitted in the opening of the recessed portion with the gasket fitted in the recessed portion, an outer surface of the ridge of the second joint member being pressed against an inner surface of the recessed portion of the first joint member with the gasket interposed between the surfaces in intimate contact therewith approximately over the entire surface areas when the pipe joint is properly tightened up, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the ridge approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion being then in

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intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the ridge approximately over the entire surface areas thereof such that efficient sealing can be effected as taught by Boitnott et al.

It would also have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the first and second tubular members from a synthetic resin because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

In re Leshin, 125 USPQ 416.

With regard to claim 15, Hideo et al in view of Boitnott et al disclose the claimed invention but do not disclose wherein at least one of a space between the male screw member and the flange portion of said one joint member and a space between the top wall of the cap nut and the flange portion of said other joint member has disposed therein a biasing member for biasing one of the joint members toward the other joint member.

Hideo teaches in alternate embodiments, as seen in Figures 2 and 3, the addition of biasing members disposed in a space between the male screw member and the flange portion of said one joint member (Figure 2) and a space between the top wall of the cap nut and the flange portion of said other joint member (Figure 3) so that, upon tightening of the cap nut and male screw member, the biasing members aid in moving the first and second tubular members towards each other.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added biasing members disposed in a space between the male screw member

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and the flange portion of said one joint member and a space between the top wall of the cap nut and the flange portion of said other joint member so that, upon tightening of the cap nut and male screw member, the biasing members aid in moving the first and second tubular members towards each other as taught by Hideo et al.

With regard to claim 17, Hideo et al in view of Boitnott et al disclose the claimed invention but do not disclose wherein a synthetic resin thrust ring is interposed between the cap nut top wall and the flange portion of the joint member.

Hideo teaches in an alternate embodiment, as seen in Figure 3, the addition of a member, such as a synthetic resin thrust ring, disposed in a space between the top wall of the cap nut and the flange portion of said other joint member (Figure 3) so that, upon tightening of the cap nut and male screw member, the member aids in moving the first and second tubular members towards each other.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a member, such as a synthetic resin thrust ring, disposed in a space between the top wall of the cap nut and the flange portion of said other joint member so that, upon tightening of the cap nut and male screw member, the member aids in moving the first and second tubular members towards each other as taught by Hideo et al.

7. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hideo et al Japanese Patent No. 06-241362 in view of Kingsford et al U.S. Patent No. 5,645,301.

With regard to claim 2, and as seen in Figure 5, Hideo et al disclose a pipe joint comprising

a first (1) and a second (1) tubular joint member, and screw means (5, 6) for joining the joint members,

wherein when the pipe joint is manually tightened up, a first gap is present between the portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion and the portion of the abutting end face of the second joint member positioned radially inwardly of the ridge, and a second gap greater than the first gap is present between the portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion and the portion of the abutting end face of the second joint member positioned radially outwardly of the ridge (*Note: the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation is given little patentable weight.*),

wherein each of the joint members is provided at the abutting end face thereof with a flange portion, and the screw means comprises an annular male screw member (6) having a forward end face in bearing contact with the flange portion of one of the joint members, and a cap nut (5) fitted around the other joint member and having a top wall in bearing contact with the flange portion of said other joint member, the cap nut being screwed on the male screw member.

However, Hideo et al do not disclose that the first and second tubular members are formed of a synthetic resin or the pipe joint being characterized in that the first joint member is provided with an annular recessed portion thereof formed between a portion of an abutting end face positioned radially inwardly and a portion of the abutting end face positioned radially outwardly, the second joint member being provided with an annular ridge on an abutting end face thereof, the ridge of the second joint member being fitted in the recessed portion of the first joint member, with an outer surface of the ridge in intimate contact with an inner surface of the recessed portion approximately over the entire surface areas when the pipe joint is properly tightened up, the portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the ridge approximately over the entire surface areas thereof, and the portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the ridge approximately over the entire surface areas thereof.

Kingsford et al teach, as seen in Figure 4, that the pipe joint can be characterized in that the first joint member (116) is provided with an annular recessed portion (108) thereof formed between a portion of an abutting end face positioned radially inwardly and a portion of the abutting end face positioned radially outwardly, the second joint member (118) being provided with an annular ridge (104) on an abutting end face thereof, the ridge of the second joint member being fitted in the recessed portion of the first joint member, with an outer surface of the ridge in intimate contact with an inner surface of the recessed portion approximately over the entire

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surface areas when the pipe joint is properly tightened up, the portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the ridge approximately over the entire surface areas thereof, and the portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the ridge approximately over the entire surface areas thereof to form a seal capable of providing a liquid-tight seal with minimal torque load and having zero hold up volume (column 1, lines 5-7).

Kingsford et al also teach that the first and second tubular members can be formed of a synthetic resin because the material resists corrosion and provides a desired degree of chemical resistance to corrosive and/or caustic chemical process chemicals (column 7, lines 14-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the pipe joint such that the first joint member is provided with an annular recessed portion thereof formed between a portion of an abutting end face positioned radially inwardly and a portion of the abutting end face positioned radially outwardly, the second joint member being provided with an annular ridge on an abutting end face thereof, the ridge of the second joint member being fitted in the recessed portion of the first joint member, with an outer surface of the ridge in intimate contact with an inner surface of the recessed portion approximately over the entire surface areas when the pipe joint is properly tightened up, the portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the

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second joint member positioned radially inwardly of the ridge approximately over the entire surface areas thereof, and the portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the ridge approximately over the entire surface areas thereof to form a seal capable of providing a liquid-tight seal with minimal torque load and having zero hold up volume as taught by Kingsford et al.

It would also have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the first and second tubular members from a synthetic resin because the material resists corrosion and provides a desired degree of chemical resistance to corrosive and/or caustic chemical process chemicals as taught by Kingsford et al.

With regard to claim 3 Hideo et al disclose a pipe joint comprising  
a first (1) and a second (1) tubular joint member,  
a synthetic resin gasket (8) interposed between abutting portions of the joint members  
and screw means (5, 6) for joining the joint members,

wherein when the pipe joint is manually tightened up, a first gap is present between the portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion thereof and the portion of the abutting end face of the second joint member positioned radially inwardly of the recessed portion thereof, and a second gap greater than the first gap is present between the portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion thereof and the portion of the abutting end face of the second joint member positioned radially outwardly of the recessed portion thereof



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*(Note: the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation is given little patentable weight.),*

wherein each of the joint members is provided at the abutting end face thereof with a flange portion, and the screw means comprises an annular male screw member (6) having a forward end face in bearing contact with the flange portion of one of the joint members, and a cap nut (5) fitted around the other joint member and having a top wall in bearing contact with the flange portion of said other joint member, the cap nut being screwed on the male screw member.

However, Hideo et al do not disclose that the first and second tubular members are formed of a synthetic resin or the pipe joint being characterized in that each of the joint members is provided in an abutting end face thereof with an annular recessed portion for forming a portion for accommodating the gasket therein when the joint members are butted against each other, the gasket being in intimate contact with an inner surface of the recessed portion of the first joint member approximately over the entire area thereof when the pipe joint is properly tightened up, a surface portion of the gasket exposed from the same recessed portion being then in intimate contact with an inner surface of the recessed portion of the second joint member approximately over the entire area thereof, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion thereof being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the recessed portion thereof approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion thereof being then in intimate contact with a portion of the abutting end face of the second joint member

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positioned radially outwardly of the recessed portion thereof approximately over the entire surface areas thereof.

Kingsford et al teach, as seen in Figure 5A, that each of the joint members (138, 140) is provided in an abutting end face thereof with an annular recessed portion for forming a portion for accommodating the gasket (142) therein when the joint members are butted against each other, the gasket being in intimate contact with an inner surface of the recessed portion of the first joint member approximately over the entire area thereof when the pipe joint is properly tightened up, a surface portion of the gasket exposed from the same recessed portion being then in intimate contact with an inner surface of the recessed portion of the second joint member approximately over the entire area thereof, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion thereof being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the recessed portion thereof approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion thereof being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the recessed portion thereof approximately over the entire surface areas thereof to form a seal capable of providing a liquid-tight seal with minimal torque load and having zero hold up volume (column 1, lines 5-7).

Kingsford et al also teach that the first and second tubular members can be formed of a synthetic resin because the material resists corrosion and provides a desired degree of chemical resistance to corrosive and/or caustic chemical process chemicals (column 7, lines 14-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the pipe joint such that each of the joint members is provided in an abutting end face thereof with an annular recessed portion for forming a portion for accommodating the gasket therein when the joint members are butted against each other, the gasket being in intimate contact with an inner surface of the recessed portion of the first joint member approximately over the entire area thereof when the pipe joint is properly tightened up, a surface portion of the gasket exposed from the same recessed portion being then in intimate contact with an inner surface of the recessed portion of the second joint member approximately over the entire area thereof, a portion of the abutting end face of the first joint member positioned radially inwardly of the recessed portion thereof being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially inwardly of the recessed portion thereof approximately over the entire surface areas thereof, and a portion of the abutting end face of the first joint member positioned radially outwardly of the recessed portion thereof being then in intimate contact with a portion of the abutting end face of the second joint member positioned radially outwardly of the recessed portion thereof approximately over the entire surface areas thereof to form a seal capable of providing a liquid-tight seal with minimal torque load and having zero hold up volume as taught by Kingsford et al.

It would also have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the first and second tubular members from a synthetic resin because the material resists corrosion and provides a desired degree of chemical resistance to corrosive and/or caustic chemical process chemicals as taught by Kingsford et al.

*Allowable Subject Matter*

8. Claims 16 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to claim 16, the prior art of record does not teach or suggest an annular spacer disposed in an annular clearance formed inside the cap nut around the flange portions of the joint members, and a biasing member for biasing one of the joint members toward the other joint member disposed in a space between the cap nut top wall and the spacer and a space between the male screw member and the spacer in combination with the pipe joint according to one of claims 1 and 3.

With regard to claim 18, the prior art of record does not teach or suggest the thrust ring having an outside diameter larger than the inside diameter of the cap nut, and the cap nut having an annular recess formed in an inner periphery thereof for accommodating an outer peripheral edge of the thrust ring in combinations with the pipe joint according to one of claims 1 to 3 and 17.

9. Claims 8-13 are allowed.

Claims 8-13 depend from claims 4-6 and are therefore also found to be allowable as claims 4-6 are allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-3 and 14-18 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fannie Kee whose telephone number is (571) 272-1820. The examiner can normally be reached on 8:30 am to 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Aaron M Dunwoody/  
Primary Examiner, Art Unit 3679

/F. K./  
Examiner, Art Unit 3679